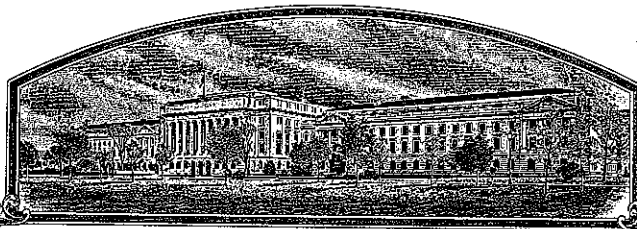


No.

200000154



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Kansas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Heyne'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fourteenth day of June, in the year of our Lord two thousand one.

Attest:

*Alvin H. Fort*

Acting Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Arthur H. Brown*

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE  
(Instructions and information collection burden statement on reverse)

1. NAME OF OWNER Kansas Agricultural Experiment Station		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME KS 85@663-42 or KS 85W663		3. VARIETY NAME Heyne	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) Waters Hall Kansas State University Manhattan KS 66506		5. TELEPHONE (include area code) 785-532-6147		FOR OFFICIAL USE ONLY PVPO NUMBER 0000154	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) University		8. IF INCORPORATED, GIVE STATE OF INCORPORATION		9. DATE OF INCORPORATION	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Vernon A. Schaffer Agronomy Department Kansas State University 2004 Throckmorton Hall Manhattan, KS 66506				FILING DATE 2-16-2000	
11. TELEPHONE (include area code) 785-532-6115		12. FAX (include area code) 785-532-6094		13. E-MAIL vas@ksu.edu	
14. CROP KIND (Common Name) Wheat				FILING AND EXAMINATION FEES: \$ 2450.00 DATE 2-16-2000 CERTIFICATION FEE: \$ DATE	
15. GENUS AND SPECIES NAME OF CROP Triticum aestivum		16. FAMILY NAME (Botanical) Gramineae		17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act <input checked="" type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input type="checkbox"/> NO (If "no," go to item 22)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF OWNER George Ham		SIGNATURE OF OWNER			
NAME (Please print or type) Dr. George Ham		NAME (Please print or type)			
CAPACITY OR TITLE Assoc. Director, Agricultural Experiment Station		DATE		CAPACITY OR TITLE DATE	

## INSTRUCTIONS

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**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$2,450 (\$300 filing fee and \$2,150 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvp.htm>

## ITEM

- 18a. Give:
- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
  - (2) the details of subsequent stages of selection and multiplication;
  - (3) evidence of uniformity and stability; and
  - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
  - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
  - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.

**22. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

Fall, 1999 sold seed in U.S.

**23. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center—East, Beltsville, MD 20705. Telephone: (301) 504-8089.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibitions apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-2791. To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal opportunity employer.

S&T-470 (6-98) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (03-96) which is obsolete.

# Heyne, PVP Application

## Exhibit A: Origin and Breeding History of the Variety

Heyne (KS 82W422/SWM754308//KS831182/KS82W422) is a double cross involving two  $F_1$  crosses made in the greenhouse in 1985.

KS 82W422 = Plainsman V/KS75216

SWM754308 = HW4/4/KT54A/N10B//KT54B/3/NAR/5/T2PP/PL/7C

HN4 = HIENE4

K454A + B = Kentana 54

N10B = Norin 10/Brevor

NAR = Narino 59

T2PP = Tezenos Pintos Piecoz

PL = Palama

7C = Sieffe Cerros

KS 831182 = Plainsman V/Lindon

- 1986:  $F_1$  grown in the field, single plant selected
- 1987:  $F_2$  grown at Ashland, KS individual heads selected
- 1988:  $F_3$  head rows planted, Ashland, KS
- 1989:  $F_4$  head rows planted, single row harvested
- 1990:  $F_5$  preliminary yield trial, stage 1 planted at Manhattan and Hutchinson, KS
- 1991:  $F_6$  preliminary yield trial, stage 2 planted at Manhattan, Hutchinson and Hays, KS; reselections made from  $F_6$  head rows.
- 1992:  $F_7$  reselections planted in preliminary yield trial, stage 1, 2 locations
- 1993:  $F_8$  planted in preliminary yield trial, stage 2; 3 locations
- 1994:  $F_9$  planted in Hard White Yield Trial; 6 locations
- 1995:  $F_{10}$  planted in Hard White Yield Trial; 6 locations. Approximately 160 head rows composited to form Heyne.
- 1996:  $F_{11}$  planted in Kansas IntraState Nursery, Southern Regional Performance Nursery (KS85W663mb, as a modified bulk of several sister lines) and the Hard White Yield Trial. Two identical sister lines KS85W663-11-6-42 and KS85W663-11-6-72 were bulked to form KS85W663-42 breeders seed.
- 1997:  $F_{12}$  planted in Kansas Winter Wheat Variety Test, Kansas IntraState Nursery.

Heyne is uniform. Variants are limited to: lighter green plants that occur at a frequency of less than 1 in 1000 plants, plants with white to tan colored glumes that occur at a frequency less than 1 in 1000 plants, taller plants or slightly late plants at a frequency of less than 1 in 5,000 plants and plants with red seed color at a frequency of less than 1 in 200. Purification will continue to reduce the number of variants.

Heyne is stable. When sexually reproduced, the variety remains unchanged in its essential and distinctive characteristics.

Heyne has remained stable and uniform for the last 4 generations of seed production.

Heyne, PVP Application  
Exhibit B: Statement of Distinctness

Heyne closely resembles Jagger in its appearance. Heyne and Jagger both have brown color chaff at maturity. They have similar fall and spring growth patterns and winter hardiness.

Heyne has hard white seed and Jagger has hard red seed. Heyne heads later than Jagger (Appendix A, Table 9).

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S)

Kansas Agricultural Experiment Station

ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)

Waters Hall  
Kansas State University  
Manhattan KS 66506

FOR OFFICIAL USE ONLY

PVPO NUMBER 20000015

VARIETY NAME

Heyne

TEMPORARY OR EXPERIMENTAL  
DESIGNATION

KS85W663-42 or  
KS85W663

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.   or  ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used.

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

1

1=Common

2=Durum

3=Club

4=Other (SPECIFY) \_\_\_\_\_

2. VERNALIZATION:

2

1=Spring

2=Winter

3=Other (SPECIFY) \_\_\_\_\_

3. COLEOPTILE ANTHOCYANIN:

1

1=Absent

2=Present

4. JUVENILE PLANT GROWTH:

2

1=Prostrate

2=Semi-erect

3=Erect

5. PLANT COLOR (boot stage):

2

1 = Yellow-Green

2 = Green

3 = Blue-Green

6. FLAG LEAF (boot stage):

2

1 = Erect

2 = Recurved

1

1 = Not Twisted

2 = Twisted

7. EAR EMERGENCE:

Number of Days Earlier Than \_\_\_\_\_ \*

0  4

Number of Days Later Than Jagger<sup>†</sup> \_\_\_\_\_ \*

8. ANTHOR COLOR:

1

1 = YELLOW

2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns):

cm Taller Than \_\_\_\_\_ \*

0  3

cm Shorter Than Jagger \_\_\_\_\_ \*

\* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

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## 10. STEM:

## A. ANTHOCYANIN

☐

1=Absent

2=Present

## B. WAXY BLOOM

☐

1=Absent

2=Present

## C. HAIRINESS (last internode of rachis)

☐

1=Absent

2=Present

D. INTERNODE (SPECIFY NUMBER) 5☐

1=Hollow

2=Semi-solid

3=Solid

## E. PEDUNCLE

☐

1=Absent

2=Present

☐

cm Length

## 11. HEAD (at Maturity):

## A. DENSITY

☐

1=Lax

2=Middense

3=Dense

## B. SHAPE

☐

1=Tapering

2=Strap

3=Clavate

4=Other (SPECIFY) \_\_\_\_\_

## C. CURVATURE

☐

1=Erect

2=Inclined

3=Recurved

## D. AWNEDNESS

☐

1=Awnless

2=Apically Awnletted

3=Awnletted

4=Awned

## 12. GLUMES (at Maturity):

## A. COLOR

☐

1=White

2=Tan

3=Other (SPECIFY) Light brown

## B. SHOULDER

☐

1=Wanting

2=Oblique

3=Rounded

4=Square

5=Elevated

6=Apiculate

## C. BEAK

☐

1=Obtuse

2=Acute

3=Acuminate

## D. LENGTH

☐

1=Short (ca. 7mm)

2=Medium (ca. 8mm)

3=Long (ca. 9mm)

## E. WIDTH

☐

1=Narrow (ca. 3mm)

2=Medium (ca. 3.5mm)

3=Wide (ca. 4mm)

## 13. SEED:

## A. SHAPE

☐

1=Ovate

2=Oval

3=Elliptical

## B. CHEEK

☐

1=Rounded

2=Angular

## C. BRUSH

☐

1=Short

2=Medium

3=Long

☐

1=Not Collared

2=Collared

## D. CREASE

☐

1=Width 60% or less of Kernel

2=Width 80% or less of Kernel

3=Width Nearly as Wide as Kernel

☐

1=Depth 20% or less of Kernel

2=Depth 35% or less of Kernel

3=Depth 50% or less of Kernel

6

## E. COLOR

☐ 1 = White    2 = Amber    3 = Red    4 = Other (SPECIFY) \_\_\_\_\_

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## F. TEXTURE

☐ 1 = Hard    2 = Soft

## G. PHENOL REACTION (see instructions):

☐ 4 = Ivory    2 = Fawn    3 = Light Brown    4 = Dark Brown    5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)  
PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

Stem Rust (*Puccinia graminis* f. sp. *tritici*)

☐ 2 \_\_\_\_\_

Stripe Rust (*Puccinia striiformis*)

☐ 0 \_\_\_\_\_

Tan Spot (*Pyrenophora tritici-repentis*)

☐ 3 \_\_\_\_\_

Halo Spot (*Selenophoma donacis*)

☐ 0 \_\_\_\_\_

Septoria nodorum (Glume Blotch)

☐ 3 \_\_\_\_\_

Septoria avenae (Speckled Leaf Disease)

☐ 0 \_\_\_\_\_

Septoria tritici (Speckled Leaf Blotch)

☐ 3 \_\_\_\_\_

Scab (*Fusarium* spp.)

☐ 3 \_\_\_\_\_

"Black Point" (Kernel Smudge)

☐ 1 \_\_\_\_\_

Barley Yellow Dwarf Virus (BYDV)

☐ 1 \_\_\_\_\_

Soilborne Mosaic Virus (SBMV)

☐ 2 \_\_\_\_\_

Wheat Yellow (Spindle Streak) Mosaic Virus

☐ 2 \_\_\_\_\_

Wheat Streak Mosaic Virus (WSMV)

☐ 3 \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Leaf Rust (*Puccinia recondita* f. sp. *tritici*)

☐ 3 \_\_\_\_\_

Loose Smut (*Ustilago tritici*)

☐ 0 \_\_\_\_\_

Flag Smut (*Urocystis agropyri*)

☐ 0 \_\_\_\_\_

Common Bunt (*Tilletia tritici* or *T. laevis*)

☐ 0 \_\_\_\_\_

Dwarf Bunt (*Tilletia controversa*)

☐ 0 \_\_\_\_\_

Karnal Bunt (*Tilletia indica*)

☐ 0 \_\_\_\_\_

Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)

☐ 3 \_\_\_\_\_

"Snow Molds"

☐ 0 \_\_\_\_\_

Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.)

☐ 0 \_\_\_\_\_

Rhizoctonia Root Rot (*Rhizoctonia solani*)

☐ 0 \_\_\_\_\_

Black Chaff (*Xanthomonas campestris* pv. *translucens*)

☐ 0 \_\_\_\_\_

Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)

☐ 0 \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_

Other (SPECIFY) \_\_\_\_\_

☐ \_\_\_\_\_



PLEASE SPECIFY BIOTYPE (where needed)

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Hessian Fly (*Mayetiola destructor*)

☐ 1

Other (SPECIFY) \_\_\_\_\_

☐

Stem Sawfly (*Cephus* spp.)

☐ 0

Other (SPECIFY) \_\_\_\_\_

☐

Cereal Leaf Beetle (*Oulema melanopa*)

☐ 0

Other (SPECIFY) \_\_\_\_\_

☐

Russian Aphid (*Diuraphis noxia*)

☐ 1

Other (SPECIFY) \_\_\_\_\_

☐

Greenbug (*Schizaphis graminum*)

☐ 1

Biotype C & E

Other (SPECIFY) \_\_\_\_\_

☐

Aphids

☐

Other (SPECIFY) \_\_\_\_\_

☐

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

**Heyne, PVP Application****Exhibit D: Additional Description of the Variety**

Heyne is best adapted to south central Kansas because of its aluminum tolerance, good grazing characteristics and excellent disease resistance. The adaptive area of Heyne would probably not extend north of I-70 in Kansas because of its winter hardiness and growth patterns in the fall and spring.

Heyne has dark green upright leaves during its vegetative stage. At heading it has a light bluish tint to the heads with a broad, lax flag leaf. The spikes tend to be short and blocky in appearance.

Heyne has resistance to the current races of stem rust and leaf rust. It is resistant, to soil borne wheat mosaic virus and wheat spindle streak mosaic virus. It has excellent tolerance to tan spot and speckled leaf blotch. It is moderately susceptible to glume blotch and powdery mildew.

WQL labnum	Year	Nursery	N: VARIETY ID	TWT	% overs	% overs	% thrus	temper mois %	flour yield	flour mois%	protein as-is	pro % 14% mb	flour ash	ash % 14% mb	mixo abs. %	mixo peak
60442	1996	HVYT	ks85w663-11-6-72	61.59	76.76	22.92	0.32	10.96	72.87	14.14	11.97	11.99	0.379	0.380	63.5	4.4
60521	1996	wkin	ks85w663-11-6-72	59.46	69.46	30.49	0.05	10.83	70.11	14.27	14.26	14.30	0.422	0.423	65.5	3.5
60560	1996	hwyt	ks85w663-11-6-33	57.86	72.16	27.72	0.12	10.68	70.34	14.06	14.94	14.95	0.432	0.432	67.5	3.5
60561	1996	hwyt	ks85w663-11-6-76	58.24	68.73	31.16	0.11	10.40	69.46	14.17	14.77	14.80	0.398	0.399	67.5	3.1
60651	1996	KIN	ks85w663-11-6-72	61.05	71.87	27.63	0.50	12.75	72.17	14.41	12.31	12.37	0.366	0.368	61.5	3.6
70264	1997	kin	ks85w663-11-6-42	60.38	71.14	28.54	0.32	11.47	70.2	14.01	13.22	13.22	0.388	0.388	65.5	3.8
70265	1997	kin	ks85w663-11-6-72	60.78	67.12	32.21	0.67	11.47	71.3	14.03	13.91	13.92	0.397	0.398	63.5	3.7
70321	1997	kin-bulk	ks85w663-42	55.65	59.96	38.29	1.75	13.79	68.4	13.41	13.98	13.89	0.408	0.405	63.5	4.1
70335	1997	kin-irr-bulk	ks85w663-42	56.94	73.31	26.08	0.61	14.69	68.5	14.23	13.30	13.33	0.363	0.364	65.5	4.5
80145	1998	man	heyne	55.69	60.78	38.14	1.08	13.79	71.60	14.37	11.66	11.71	0.378	0.380	61.5	5.1
80148	1998	k	heyne	59.04	22.66	72.97	4.37	12.27	69.40	14.14	15.52	15.55	0.378	0.379	67.5	5.8
80320	1998	kin-east	85-663-42-Heyne	59.7	63.3	35.5	1.1	12.6	71.2	13.5	12.2	12.1	0.337	0.335	61.5	4.5
80335	1998	kin-irr	85-663-42-Heyne	59.9	46.6	52.5	0.9	12.0	70.2	14.1	14.2	14.2	0.440	0.441	64.5	3.1
80350	1998	kin-cen	85-663-42-Heyne	60.6	63.0	36.3	0.8	12.5	71.4	14.3	11.8	11.8	0.334	0.335	61.5	4.3
90161	1999	kin	heyne	56.92	64.68	34.01	1.31	13.70	68.07	14.24	12.62	12.66	0.349	0.350	63.5	5.5

WQL labnum	Year	Nursery	Ni	VARIETY	ID	color			RVA	noodle			noodle			noodle		
						L	a	b	visc.	L@0	L@24	L@48	a@0	a@24	a@48	b@0		
60442	1996	HWYT		ks85w663-11-6-72		92.0	-1.5	7.7	220	80.4	71.5	69.6	-1.9	-1.0	0.0	23.4		
60521	1996	wkin		ks85w663-11-6-72		91.7	-1.6	7.3	224	79.2	69.5	68.1	-1.8	-0.5	0.3	21.7		
60560	1996	hwyt		ks85w663-11-6-33		91.6	-1.4	7.2	227	78.4	68.8	67.3	-1.4	-0.5	0.6	22.1		
60561	1996	hwyt		ks85w663-11-6-76		91.8	-1.4	7.6	227	78.6	69.6	68.2	-1.5	-0.7	0.1	22.9		
60651	1996	KIN		ks85w663-11-6-72		91.7	-1.7	8.4	232	80.0	72.0	70.8	-1.8	-0.9	-0.1	22.9		
70264	1997	kin		ks85w663-11-6-42		91.6	-1.7	8.1	241	78.70	69.70	67.40	-1.95	-0.95	1.30	24.30		
70265	1997	kin		ks85w663-11-6-72		91.7	-1.6	7.7	238	78.65	68.50	66.60	-2.00	-0.85	1.10	24.65		
70321	1997	kin-bulk		ks85w663-42		91.4	-1.7	7.4	233	76.40	68.50	66.20	-1.40	-0.65	1.10	23.30		
70335	1997	kin-irr-bulk		ks85w663-42		92.0	-1.6	7.5	246	76.80	71.20	68.60	-1.90	-0.90	1.50	24.85		
80145	1998	man		heyne		91.1	-2.3	7.3	231	80.4	70.6	68.7	-2.2	-1.5	-0.7	20.7		
80148	1998	k		heyne		91.0	-2.2	7.9	238	78.6	69.0	66.8	-1.6	-0.9	0.1	24.3		
80320	1998	kin-east		85-663-42--Heyne		91.3	-2.3	7.5	218	79.1	72.0	68.6	-2.0	-1.6	0.5	23.3		
80335	1998	kin-irr		85-663-42--Heyne		90.5	-2.3	8.9	233	77.5	67.0	64.2	-2.2	-1.3	1.2	24.9		
80350	1998	kin-cen		85-663-42--Heyne		92.0	-2.3	7.7	274									
90161	1999	kin		heyne		91.7	-2.5	7.3	84	80.2	72.7	71.9	-2.1	-1.5	-0.5	21.7		

WQL labnum	Year	Nursery	Ni	VARIETY	ID	noodle b @ 24	noodle b @ 48	over 48 hrs	over 48 hrs	bake abs. %	mix time	acid ppm	dough props	loaf volume
60442	1996	HWYT		ks85w663-11-6-72		27.3	27.8	-10.8	1.9	63.5	4.2	0.0	vsb	935
60521	1996	wkin		ks85w663-11-6-72		25.4	25.3	-11.2	2.0	64.5	4.3	38	vsb	1000
60560	1996	hwyt		ks85w663-11-6-33		24.7	25.0	-11.1	2.0	65.0	3.9	50	vsb	1140
60561	1996	hwyt		ks85w663-11-6-76		25.3	25.5	-10.4	1.6	64.0	3.3	50	vsb	1105
60651	1996	KIN		ks85w663-11-6-72		26.7	26.8	-9.2	1.8	60.5	4.0	38	sb	970
70264	1997	kin		ks85w663-11-6-42		26.80	28.10	-11.30	3.25	64.5	4.4	50	sb	985
70265	1997	kin		ks85w663-11-6-72		25.45	26.90	-12.05	3.10	63.5	4.4	38	sb	1015
70321	1997	kin-bulk		ks85w663-42		24.75	26.40	-10.20	2.50	62.5	4.0	50	vsb	1065
70335	1997	kin-irr-bulk		ks85w663-42		26.60	28.75	-8.20	3.40	62.5	4.0	13	vsb	1050
80145	1998	man		heyne		24.7	25.1	-11.7	1.5	59	4.7	13	sb	990
80148	1998	k		heyne		26.5	27.1	-11.8	1.7	64	5.7	25	vsb	1145
80320	1998	kin-east		85-663-42--Heyne		26.1	28.2	-10.5	2.5	59.5	4.0	25	sb	1030
80335	1998	kin-irr		85-663-42--Heyne		25.0	26.6	-13.3	3.4	60.5	2.9	75	sm	1090
80350	1998	kin-cen		85-663-42--Heyne				0.0	0.0	59.5	4.5	25	sb	1000
90161	1999	kin		heyne		25.5	25.8	-8.3	1.6	59.5	5.4	13	sb	995

WQL labnum	Year	Nursery	Ni	VARIETY	ID	grain score	crumb color	note	abs. % rating	volume rating	%soft	% semi soft	% semi hard	%hard
60442	1996	HVYT		ks85w663-11-6-72		3.9	vsl crmy		SQ	S	7	21	30	42
60521	1996	wkin		ks85w663-11-6-72		4.0	white		Q-SQ	Q	2	13	32	53
60560	1996	hwyt		ks85w663-11-6-33		3.8	white		Q-SQ	S	2	10	35	53
60561	1996	hwyt		ks85w663-11-6-76		3.8	vsl crmy		Q	S	6	26	33	35
60651	1996	KIN		ks85w663-11-6-72		3.8	vsl crmy		U-Q	S	2	7	23	68
70264	1997	kin		ks85w663-11-6-42		3.8	vsl crmy		sq	s	2	11	29	58
70265	1997	kin		ks85w663-11-6-72		3.8	vsl crmy		q	q-s	0	10	29	61
70321	1997	kin-bulk		ks85w663-42		3.6	vsl crmy	vsl open	q	s	13	29	35	23
70335	1997	kin-irr-bulk		ks85w663-42		3.8	white	slo	q	s	15	28	25	32
80145	1998	man		heyne		3.8	vsl crmy				23	30	25	22
80148	1998	k		heyne		3.6	vsl crmy	sl open			3	5	21	71
80320	1998	kin-east		85-663-42-Heyne		3.7	white	v. sl. open; nice grain; big volume			12	30	31	27
80335	1998	kin-irr		85-663-42-Heyne		3.3	vsl crmy	sl. open; huge vol; mixtime;			2	5	17	76
80350	1998	kin-cen		85-663-42-Heyne		3.8	brite white	exc. crumb; close even			10	25	28	37
90161	1999	kin		heyne		3.7	vsl crmy	vsl open	u	s	13	29	32	26

WQL	labnum	Year	Nursery	N:	VARIETY	ID	avg. hardness	avg. weight	avg. diameter
	60442	1996	HWYT		ks85w663-11-6-72		55.41	31.38	2.51
	60521	1996	wkin		ks85w663-11-6-72		60.20	29.18	2.35
	60560	1996	hwyt		ks85w663-11-6-33		61.81	29.65	2.38
	60561	1996	hwyt		ks85w663-11-6-76		54.08	30.52	2.37
	60651	1996	KIN		ks85w663-11-6-72		66.01	29.24	2.41
	70264	1997	kin		ks85w663-11-6-42		61.35	29.01	2.35
	70265	1997	kin		ks85w663-11-6-72		62.66	29.03	2.38
	70321	1997	kin-bulk		ks85w663-42		49.24	26.98	2.24
	70335	1997	kin-irr-bulk		ks85w663-42		50.34	29.95	2.38
	80145	1998	man		heyne		45.41	26.51	2.16
	80148	1998	k		heyne		67.12	23.7	1.95
	80320	1998	kin-east		85-663-42-Heyne		50.64	27.25	2.15
	80335	1998	kin-irr		85-663-42-Heyne		69.24	26.01	2.09
	80350	1998	kin-cen		85-663-42-Heyne		53.19	28.63	2.20
	90161	1999	kin		heyne		49.70	28.40	2.20

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

EXHIBIT E

STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) Kansas Agricultural Experiment Station	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER KS85W663-42 or KS85W663	3. VARIETY NAME Heyne
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) Waters Hall Kansas State University Manhattan, KS 66506	5. TELEPHONE (include area code)	6. FAX (include area code)
7. PVPO NUMBER 200000154		
8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
10. Is the applicant the original owner? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, please answer <u>one</u> of the following: a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country		
11. Additional explanation on ownership (if needed, use reverse for extra space):		

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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